

# WeeklyReport

# Engineering Weekly Report 11/6/2025 - 11/13/2025

<https://docs.mbari.org/internal/projects/Engineering/Weeklies/2025/>

## Executive Council Notes

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## Individual Activities

- Michael Anderson
- Kevin Barnard
  - Out of Office
    - Oct 27, 2025 - Oct 31, 2025 : UCSB NCEAS Innovation in Digital Assets workshop
- Francois Cazenave
  - 901405 - Wave-Energy Conversion for Oceanographic Applications
    - Installing the powerbuoy in buoy room and PTO in building G
  - 902106 - Niobicon-Based AUV Docking Development
    - Planning december deployment
  - 902504 - Scalable Semantic Mapping
    - Assembling Ventana drawer sled
  - Out of Office
    - 1 day of vacation
- Danelle Cline
  - 901221 - Midwater Time Series
    - Finished training RF-DETR Large model two ways: one with full i2MAP frame size 1920x1080, and the other with 640x640 augmented image crops. Despite the pseudo labels, roughly double the performance when training on augmented crops so this is the likely target for a production pipeline. Rob S to review pseudo labels next week, then retraining with cleaned

labels.



- Exploring [Argo](#) with simplified kubernetes for scaled video processing (and image processing).
- 901502 - Ocean Soundscape
  - Deployed [Google Humpback whale model](#) to Triton in preparation for real-time workflow
- 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
  - Trained new ViT classifier
  - Working on missionview web application
- 902111 - Carbon Flux Ecology
  - Meeting with [Voxel51](#) to discuss enterprise deployment and general capabilities. This tool has nice features such as similarity search and clever ways to interact with the data to speed-up and improve our labeling, QA/QC, etc. Could work with our existing REDIS vector database.
- Duane Edgington
  - 901502 - Ocean Soundscape
    - Exploring update to [PacificSoundClassifyBlueA.ipynb](#) machine learning model / notebook to classify blue whale A calls.
  - 901902 - Unoccupied Aerial Vehicles for Science, Operations and Outreach
    - Training detector model on Nvidia DGX-spark system. [RF-detr](#) Large model. So far so good... Will compare/contrast with our [RF-detr nano model](#) released to Huggingface
  - Out of Office
    - Dental appt Nov 19.
    - November 24 - Nov 26. Vacation
    - Dec 1 - Dec 5 Acoustic Society of America meeting.
    - Dec 8 - Dec 10. Vacation
- Jon Erickson
- Kevin Gomes
  - 706008 - READI-Net
    - Final push to fix bugs and features for end of program
    - More features
  - 902403 - Expedition DB Modern
    - More plumbing for new Packard flows.
  - Overhead

- Coordinating Monterey High School Tour in January
  - Prepped and delivered Board talk last week (didn't put in report last week)
- Andy Hamilton
- Kent Headley
  - 300078 - DMO Support - AUV
    - updated part of GUI layout to group controls in a more sensible way
    - working on integrating MVC power supply serial output into GUI
  - 902204 - Scalable Robotics
    - checked out oculus sonar for tank test and MOB
  - Out of Office
    - 11/17-19 sick leave
    - hiring, group lead discussions
    - misc admin
- Rich Henthorn
  - Out of Office
    - Mon Oct 20 - Tue Oct 21: Sick leave
    - Fri Oct 24 - Wed Oct 29: Vacation (Fri and Wed) and remote work (Mon and Tue)
    - Mon Nov 10 - SES recovery from Carson
    - Dec 19 - Jan 1: Vacation
- Akshay Hinduja
  - 902101 - LRAUV Technology Development
    - Have v1 matplotlib based simulated LRAUV log playback ready. Downsides are slower performance, but good for diagnosing vehicle issues, and observing state behaviour visually
    - Working on quick tangential option of using holoocean simulator using Unreal Engine for higher fidelity animations
    - Diving into LRAUV codebase to integrate with gazebo
  - 902204 - Scalable Robotics
    - Worked with Johann to checkout latest versions of norbit driver for ASV operations, setup scripts to enable single operator modes
    - Random issue with image display is unresolved, perhaps a change in system packages caused a break? Was working a day before
    - Help Johann with dock survey on Thursday 11/13
  - Overhead
    - Trailant training
    - Project updates
- Brett Hobson
- Irene Hu
  - 901904 - Deep-Sea Coral-Sponge Community Observatory
    - More bells and whistles added to GUI, ready for testing with actual controller
  - 902305 - Event Detection Using the Sedimentation Event Sensor
    - Carson recovery on Monday 11/10; all recovered successfully, but TT carousel was stuck
  - Overhead
    - Rec com BBQ 11/12/25
  - Out of Office
    - Nov 24-28: vacation
- Scott Jensen
  - 706008 - READI-Net
    - Much work on code verification and recovery processes
    - Preparing for contractor visit to commission remaining instruments
  - 901405 - Wave-Energy Conversion for Oceanographic Applications

- Conducted a sleuthing into the buoy failures.
  - Out of Office
    - McCloud Recovery Oct 27-28
- Brent Jones
  - 901112 - Monterey Bay Time Series
    - Deployed Daphne and WG
  - 901805 - Coastal Biogeochemical Sensing Program
    - PCB design for 3 board nanoFET stackup
    - Mechanical design for nanoFET modular. Reducing overall size
  - Overhead
    - Staff party
- Chad Keycy
  - Out of Office
    - Out of office on Fridays
- Brian Kieft
  - Out of Office
    - 07/23
    - 07/28-08/01 (MST)
    - 08/25-29 (PDT)
    - 9/15-30 (UTC+2)
- Denis Klimov
- Eric Martin
  - 901101 - Seafloor Mapping
    - Meeting last week with 3d@depth, following up this week.
    - Checking out some software fixes.
  - 901405 - Wave-Energy Conversion for Oceanographic Applications
    - Some troubleshooting on the recovered system found mechanical damage to a connector led to the disconnect of power to the top hat controller. We still need to follow up on the damaged load cell and unresponsive laser range finder.
  - 902504 - Scalable Semantic Mapping
    - Offshore Nov 12, 2025 with another drawer configuration, all went well.
  - Overhead
    - Telepresence live link is ready for soft launch, getting the correct services setup.
  - Out of Office
    - Underwater Intervention 12-2-12/5
- Thom Maughan
  - 300078 - DMO Support - AUV
    - Working with Erik on Hyperion MVC2 (som carrier) board bringup. Phytex / NXP docs are nice. Linux is up and running and were debugging uSD and ethernet switch. Console, USB OTG, bootcfg are working.
  - 300083 - DMO Support - LRAUV
    - Formalizing the test plan and providing explanation on functionality. Found and fixed a couple bugs. Charging at upper voltage limit is causing thermal issues, investigating.
    - Looking into heat spreader plate.
  - 902004 - Planktivore
    - Working on DeepRip2 purchasing. Thanks to Kent for the budget bump to cover increased hardware costs.
    - Working imaging tube design updates with Aaron, looking at various options for spares.
  - Out of Office
    - Vacation 21 Nov to .28 Nov

- Mike McCann
  - 901101 - Seafloor Mapping
    - Set up cron job to email latest M1 sound speed profile data to science team on the Packard
  - 901910 - Plankton Taxonomic Groups from AUVs
    - Continuing to work on [adding the processing of MBARI Long Range AUV data](#) to auv-python
  - 902101 - LRAUV Technology Development
    - Got help from Quinn with cleaning up some memory corrupted delayed mode data from brizo
- Paul McGill
  - Out of Office
    - I've been busy sleeping in because I'm retired!
- Enoch Nicholson
  - Out of Office
    - Thursdays at MLML
- Tom O'Reilly
- Mike Risi
  - Out of Office
    - Offsite on Tuesday and Friday
    - March 3 - March 6, 2025 - vacation
    - June 2 - June 6, 2025 - vacation
    - June 16, 2025 - vacation
    - July 2, 2025 - vacation
    - July 29 - August 1st - vacation
    - November 10 - November 14 - vacation
    - January 19, 2026 - January 30, 2026 - vacation
- Paul Roberts
  - 901221 - Midwater Time Series
    - 4k recorder controller schematic capture
  - 901513 - Targeted Sampling by AUVs
    - Integration of VL krill model into Triton Camera
  - 901809 - Deep Sea Bioinspiration
    - Scubris chassis fabrication
    - UWA image system design support
  - 902004 - Planktivore
    - Production support
    - Shadowgraph illumination testing
  - 902204 - Scalable Robotics
    - HSI strobe deployment
  - Out of Office
    - Nov 22 through Nov 30, Scotland
- Brent Roman
  - 708184 - ESP Monitoring PNW
    - Cell modem test rig I help develop a few weeks ago was deployed to compare two different modems performance while ship loitered around the ESP mooring site
      - I spent a couple hours yesterday monitoring it and playing with modem configuration.
  - 901205 - ESP SURF Center
    - Finished repairing ESPecoscope and discovered an Arm drive belt needs replacement.
    - Presented results of LTE cell modem evaluation to the ESP team
    - Installed the chosen modem dongle on the FIDO sample being deployed on dock next week.
  - 902304 - Piscivore Cam
    - Monitoring ongoing deployment.

- Wrote a script to sequence through alternative shutter speeds and auto exposure gains.
  - Contacted USB camera vendor recommended by Paul Roberts
- Carlos Rueda
  - Out of Office
    - Dec 1–11, 22–30: vacation
    - Jan 2–5: vacation
- Karen Salamy
  - 200103 - Core CTD Data - MDUC
    - Updated EXPD with the most recent ROV CTD O2 flags from Rob.
  - 300057 - Mooring Maintenance
    - Check downloads from the moorings and maintenance of the server.
  - 901101 - Seafloor Mapping
    - Set up a new test server (smdb-dev) for updating the SMDB dash. This allows me to test all of the missions and UI edits prior to creating a pull request for the production site.
    - Began addressing issue fixes for the science team on the new test server including map display for the home page, filtering of missions on the home page map, drawing a bounding box of missions (filtered and unfiltered) that will then produce and exportable spreadsheet of each mission in the bounding box.
  - Overhead
    - Various talks, meetings and ceremonies this past week.
  - Out of Office
    - On-campus 3 days/week ( **T, W, TH**). New OFFICE - G106.
- Brian Schlining
  - Out of Office
    - Oct 23, 2025 - Out sick
    - Nov 26, 2025 - Dec 3, 2025 - Vacation
    - Dec 15, 2025 - Dec 19, 2025 - PAIDIVER workshop. University of Southampton, UK.
    - Apr 6, 2026 - Apr 24, 2026 - Vacation
    - May 18, 2026 - May 22, 2026 - Marine Imaging Workshop, Gibraltar
- Alana Sherman
  - 902208 - Mini ROV Operations
    - Talking through plans for the deployment of the DAS cable. Trying to figure out which concept is the easiest to achieve the goals, but each is complex
    - With Jose's help, figuring out the matting connectors for the Packard's van service box which will be used to pass comms from the MiniROV van to the ship. This will also be used by other vans moving forward.
  - 902401 - Geo-Sense
    - Working through details that impact our winter cruise (see above with Mini) and our proposed Kolumbo expedition
    - Did a tank test with new Linden FO cable, it seems to have more memory and we are worried it will not lay flat. We are working with the vendor to try and optimize the FO cable
  - Overhead
    - Finished up Seafloor processes interviews and hire is now complete! Hooray!
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- George Stern
  - 902204 - Scalable Robotics
    - Rebuilt PoE and HSI camera cans with finalized trigger board

- Rebuilt electronics HSI light housings a few additional times; root cause for switching chip failure remains unclear and another odd failure mode was identified; best effort to keep them working for the deployment today, hopefully they work
- 902304 - Piscivore Cam
  - Looked through hundreds of additional lenses on aliexpress and autofocus solutions; identified a few additional possible lens candidates
- 902106 - Niobicon-Based AUV Docking Development
  - Root caused docking arm stuttering to LRAUV SW control; very unlikely it had anything to do with docking failure.
- Justin Tucker
  - 901101 - Seafloor Mapping
    - Updates to eye safe cover for LIDAR
  - 902010 - Mesopelagic LRAUV
    - Carbon tube scaled test sample order
  - 902208 - Mini ROV Operations
    - Thruster upgrade shaft redesign
- Johann Voigtlander
  - 902204 - Scalable Robotics
    - Added Procman & LCM spy to blueboat
    - Event camera tests in the test tank
    - Organized Blueboat harbor survey for DMO
  - 902208 - Mini ROV Operations
    - Getting quote for DVL
    - Helping Matt with dangerous goods paperwork to get the containers back to MBARI ASAP
    - Attended Geosense MiniROV deployment meeting
  - 902402 - CSEM
    - Moved equipment to ESB
    - Set up the system for a tutorial for Eliana
    - Moved line spooler to ESB to decrease length of line from 250m to 150m for Antarctic trip
    - Working on shipping logistics to Chile
  - Out of Office
    - Dec 16th - Jan 10th - Vacation
    - May 30th - June 5th
    - Oct 9-13th